

**WHAT IS CLAIMED IS:**

1. A display equipment, comprising:

a display device;

5       said display device including first, second and third light-emitting  
elements, which respectively emit light of the three primary colors of R, G, and  
B;

      said first, second and third light-emitting elements are aligned in a fixed  
order in a first direction to form one pixel;

      a plurality of said pixels are aligned in a said direction to form one line;

10       a plurality of said lines are aligned in a second direction, which is  
orthogonal to said first direction, to form a display screen;

      a display image storage means for storing display image information to be  
displayed on said display device;

      a display control means;

15       said display control means including means for controlling said display  
device to perform display based on display image information stored by said  
display image storage means;

      an original image data storage means;

20       said original image data storage means including means for storing a raster  
image to be displayed currently;

      a three-times magnified pattern determination means;

25       said three-times magnified pattern determination means for determining,  
based on the raster image in said original image data storage means, a three-times  
magnified pattern in which the definition is magnified by three in said first  
direction;

said display image storage means including means for storing said three-times magnified pattern produced by said three-times magnified pattern determination means;

5       said three-times magnified pattern determination means determines a three-times magnified pattern, in which a target pixel in said raster image stored in the original image data storage means is magnified by three in said first direction, in accordance with a rectangular reference pattern of a total of  $(2n + 1) \times (2m + 1)$  (where  $n$  and  $m$  are natural numbers) pixels consisting of said target pixel and pixels that surround said target pixel; and

10       said display control means enables said display device to perform display upon allocating said three-times magnified pattern to said first, second and third light-emitting elements that form one pixel.

2. A display equipment as set forth in claim 1, wherein  $n = 1$  and  $m = 1$ .

15       3. A display equipment as set forth in claim 1, wherein said raster image stored by said original image data storage means is one of a bit map font, a bit map image, formed by raster development of a vector font, and a raster image that is not a font.

20       4. A display equipment as set forth in claim 2, wherein said raster image stored by said original image data storage means is one of a bit map font, a bit map image, formed by raster development of a vector font, and a raster image that is not a font.

25       5. A display equipment as set forth in claim 1, wherein said three-times magnified pattern determination means includes means for referencing a reference pattern storage means, which stores three-times magnified pattern determination rules, to determine said three-times magnified pattern.

6. A display equipment as set forth in claim 5, wherein information for pattern matching of said reference pattern, is stored in said reference pattern storage means.

5 7. A display equipment as set forth in claim 5, wherein a bit string, which expresses said reference pattern in the form of bits, and information indicating a three-times magnified pattern for this bit string, are stored in an associated manner in said reference pattern storage means.

10 8. A display equipment as set forth in claim 1, wherein said three-times magnified pattern determination means determines said three-times magnified pattern by referencing calculation results of a three-times magnified pattern logical operation means, which performs logical operations based on said reference pattern.

15 9. A method of performing display with a display device comprising:  
forming a display screen by forming first, second and third light-emitting elements, which respectively emit light of the three primary colors of R, G, and B;

aligning said first, second and third light-emitting elements in a fixed order in a first direction form one pixel;

aligning a plurality of said pixels in said first direction to form one line;

20 aligning a plurality of said lines in a second direction, which is orthogonal to said first direction, to form said display screen;

forming a three-times magnified pattern, with which a target pixel in a raster image to be displayed currently is magnified by three in said first direction;

25 said raster image being determined in accordance with a rectangular reference pattern of a total of  $(2n + 1) \times (2m + 1)$  (where  $n$  and  $m$  are natural

numbers) pixels consisting of a target pixel and pixels that surround said target pixel; and

allocating said three-times magnified pattern to said first, second and third light-emitting elements making up one pixel, thereby driving said display device.

5           10. A display method as set forth in claim 9, wherein  $n = 1$  and  $m = 1$ .

11. A display method as set forth in claim 9, wherein said raster image is one of a bit map font, a bit map image, formed by raster development of a vector font, and a raster image that is not a font.

10           12. A display method as set forth in claim 9, wherein in the process of determining the three-times magnified pattern, determining said three-times magnified pattern by referencing three-times magnified pattern determination rules stored in a reference pattern storage means.

15           13. A display method as set forth in claim 12, further comprising storing information for pattern matching of said reference pattern in said reference pattern storage means.

14. A display method as set forth in claim 12, further comprising storing in said reference pattern storage means a bit string, which expresses said reference pattern in the form of bits, and information indicating a three-times magnified pattern for said bit string, in an associated manner.

20           15. A display method as set forth in claim 9, further comprising determining said the three-times magnified pattern by referencing a calculation results of a three-times magnified pattern logical operation means, which performs logical operations based on said reference pattern.

16. A storage medium storing a display control program, comprising:

said display control program being of a type for performing display with a display device;

said display device including first, second and third three light-emitting elements, which respectively emit light of three primary colors of R, G, and B;

5       said first, second and third light-emitting elements are aligned in a fixed order to form one pixel;

a plurality of said pixels are aligned in a first direction to form one line;

a plurality of said lines are aligned in a second direction, which is orthogonal to said first direction, to form a display screen;

10       means for determining a three-times magnified pattern, in which a target pixel in a raster image to be displayed currently is magnified by three in said first direction, in accordance with a rectangular reference pattern of a total of  $(2n + 1) \times (2m + 1)$  (where  $n$  and  $m$  are natural numbers) pixels consisting of a target pixel and pixels that surround said target pixel; and

15       means for enabling said display device to display by allocating said three-times magnified pattern to said first, second and third three light-emitting elements that form one pixel.

17. A display equipment, comprising:

a display image storage means for storing a display image;

20       a display means;

said display means including a plurality of first, second and third light-emitting elements, which respectively emit light of three primary colors of R, G, and B;

25       said first, second and third light-emitting elements are aligned in a fixed order in a first direction to form one pixel;

said plurality of pixels being effective to perform display based on said display image stored in the display image storage means;

a character string storage means;

5 said character string storage means including means for storing a character string to be displayed;

a format information storage means;

said format information storage means including means for storing format information on respective characters of said character string to be displayed;

a character string image generating means;

10 said character string image generating means including means, based on said format information, for generating a character string image, in which said character string stored by said character string storage means is formatted in an integral manner;

a sub-pixel image generating means;

15 said sub-pixel image generating means including means for generating a sub-pixel image, with which said generated character string image is mapped at a level of said light-emitting elements, and for storing said sub-pixel image in said display image storage means; and

a control means;

20 said control means including means for allocating said sub-pixel image in said display image storage means to respective ones of said light-emitting elements to display said information.

18. A display equipment as set forth in claim 17, further comprising:

a filtering process means;

25 said filtering process means including means for transferring to said sub-pixel image generating means, information on energy collection of said character

string image, generated by said character string image generating means, among at least one of said respective light-emitting elements that comprise a single pixel and light-emitting elements adjacent to said light-emitting elements.

5 19. A display equipment as set forth in claim 17, wherein said character string is at least one of a word, a row, a column, and a paragraph.

20. A display equipment as set forth in claim 17, wherein said format information concerns at least one of kerning, both-end equal spacing, right justify, left justify, and centering.

10 21. A display method, comprising:  
acquiring a character string to be displayed;  
acquiring format information on respective characters of said character string to be displayed;  
generating, based on said format information, a character string image, in which said character string to be displayed is formatted in an integral manner;  
15 generating a sub-pixel image, with which said character string image is mapped at a level of respective light-emitting elements that comprise one pixel; and  
allocating said sub-pixel image to each of said light-emitting elements to perform sub-pixel display.

20 22. A display method as set forth in claim 21, further comprising:  
performing a filtering process, prior to generation of said sub-pixel image, by which energy is distributed among respective light-emitting elements that comprise one pixel of said character string image.

25 23. A display method as set forth in claim 21, wherein said character string is at least one of a word, a row, a column, and a paragraph.

24. A display method as set forth in claim 21, wherein said format information concerns at least one of kerning, both-end equal spacing, right justify, left justify, and centering.

5 25. A method for a storage medium storing a program, comprising:  
acquiring a character string to be displayed;  
acquiring format information on respective characters of said character string to be displayed;

generating, based on said format information, a character string image, in which said character string to be displayed is formatted in an integral manner;

10 generating a sub-pixel image, in which said character string image is mapped at a level of respective light-emitting elements that comprise one pixel;  
and

allocating said sub-pixel image to each of said light-emitting elements to perform sub-pixel display.

15 26. A display method for performing display with a display device, comprising;

aligning first, second and third light-emitting elements, which respectively emit light of the three primary colors of R, G, and B, in a fixed order in a first direction to form one pixel;

20 aligning a plurality of pixels in said first direction to form one line;  
aligning a plurality of lines in a second direction, which is orthogonal to said first direction, to form a display screen, to perform display;

acquiring three-times magnified image data, consisting of sub-pixels resulting from magnification of a raster image to be currently displayed by three  
25 in said first direction;

performing a filtering process on said three-times magnified image data;



determining a mixing ratio of foreground color and of background color of each pixel based on results of said filtering process;

acquiring said foreground colors and said background colors of respective pixels;

5 determining a mixed color, in which said foreground color and background color are mixed at a sub-pixel unit, for each pixel in accordance with said mixing ratio that was determined; and

performing display on said display device of color sub-pixel display in accordance with said mixed color.

10 27. A display method as set forth in claim 26, wherein the step of determining a mixing ratio includes normalizing values resulting from filtering.

28. A display method as set forth in claim 26, wherein said foreground color value, background color value, and mixing ratio are expressed in 8 bits.

15 29. A method for a storage medium containing a program for performing display with a display device, comprising:

aligning first, second and third three light-emitting elements, which respectively emit light of three primary colors of R, G, and B, in a fixed order in a first direction to form one pixel;

aligning a plurality of said pixels in said first direction to form one line;

20 aligning a plurality of said lines in a second direction, which is orthogonal to said first direction, to form a display screen;

acquiring three-times magnified image data, consisting of sub-pixels resulting from magnification of a raster image to be currently displayed by three in said first direction;

25 performing a filtering process on said three-times magnified image data

determining a mixing ratio of a foreground color and a background color of each pixel based on results of said filtering process;

acquiring foreground colors and background colors of respective pixels;

5 determining a mixed color, in which foreground color background color are mixed at a sub-pixel level, for each pixel in accordance with said mixing ratio; and

displaying color sub-pixel display in accordance with said mixed color.